

This love of plant life as a part of natural scenery, of trees and flowers, and an eager interest in systematic botany persisted and, later on, developed toward paleobotany, for Cope became one of the greatest paleontologists of the world. While primarily interested in paleozoology he was widely and exactly informed concerning fossil plants, and utilized the evidence of paleobotany in checking his comparisons and identifications of geological horizons. Many allusions to wild flowers occur in his delightful letters (the names often misspelled by him or the editors); and especially to trees and forest growths, in themselves, and as a part of the ecological environment of living animals. Some of Cope's descriptions of vegetable life and growth amount to "literature". Incidentally botanists and nature lovers generally will be interested in the education, explorations, discoveries, achievements, and interpretations, of one of America's leading field, systematic, and philosophical biologists. One who lived much on the plains and prairie deserts, in the mountains, in swamps, or the tropical Mexican jungles. He was an original evolutionary thinker, and a keen observer and reporter of plant life as he found it. Incidentally, the reviewer recalls Cope most characteristically with a floral boutonniere in his coat lapel. Professor Osborn has given us a delightful and dependable biography of this great master.

WILLIAM HARPER DAVIS

The International Address Book of Botanists.²

This has been referred to several times in *Torreyia* as in course of preparation. The book was prepared in accordance with a resolution passed by the Fifth International Botanical Congress at Cambridge, England, in 1930. The work was done by a committee consisting of Dr. L. Diels, Direktor, Botanischer Garten und Botanisches Museum, Berlin-Dahlem, Germany, Dr. E. D. Merrill, Director-in-Chief, New York Botanical Garden, New York, and Dr. T. F. Chipp, Royal Botanic Gardens, Kew, England. The short preface, which is printed in English, French, and German gives the scope of the book. "The arrange-

² International Address Book of Botanists. Published for the Bentham Trustees by Bailliere, Tindall and Cox, London. 1931. XV+605 pages. 12 s. 6d.

ment is by countries alphabetically. The entries under each country are, as far as practicable, in the language of the country. At the beginning an index gives page reference to each country. At the end there is an index with a page reference to each personal entry.

The entries under each country include:

- (a) Societies with their postal addresses.
- (b) Institutions wholly or chiefly botanical, their addresses and departments; educational institutions having separate departments dealing with botanical teaching and research.
- (c) The surname and initials of Botanists, both professional and amateur, with information as to their offices and professional qualifications, their postal addresses, and their special botanical interests."

In the index to countries some 130 countries are listed, in some there is only one name mentioned, lonely places for botanists, as in Angola, Liberia, and Zanzibar. The list of institutions and botanists in the United States requires 148 pages. Probably the list of amateur botanists is more complete for the United States than for many other countries. Some 22,000 names of individuals are listed in the book.

GEORGE T. HASTINGS

Types of Humus Layer in the Forests of Northeastern United States. By L. G. Romell and S. O. Heiberg. *Ecology* 12:567-608, 1931.

The paper represents a first systematic effort of applying outside Europe the principles and method laid down by P. E. Müller in his classical studies on natural types of humus layer. It is also a contribution to the question of classification and nomenclature of forest humus layers in general. After a critical review of the different proposals of classification, the authors conclude that Müller's system fits the natural conditions best. That this holds true for American conditions is indicated especially by the flora characteristic of different types of humus layer. A fundamental point of Müller's system is that the classification applies to the entire humus layer (i.e., the top layer of soil, owing its characteristic features largely to its humus content; no matter whether this content is high or low and whether the humus is "incorporated" or not). The authors strongly op-